

WHAT IS CLAIMED IS:

Sub A1 >

2 1. A lighting system for a display, comprising:  
3 a light source providing invisible light having a wavelength in  
4 a spectrum not visible to the human eye;  
5 a reflective layer having at least one of a phosphorescent and  
6 a fluorescent surface reflecting the invisible light from the light source and  
7 converting the invisible light into visible light visible to the human eye;  
8 and  
9 a display layer in which pixels of the display layer may be  
10 altered by applying an electrical charge to the display layer in a controlled  
11 manner, the display layer being illuminated by the visible light from the  
reflective layer.

1 2. The lighting system of claim 1, wherein the light source  
2 includes a light guide.

1 3. The lighting system of claim 1, wherein the light source is  
2 provide above the display layer.

1 4. The lighting system of claim 1, wherein the light source is  
2 provided below the display layer.

1 5. The lighting system of claim 1, wherein the reflective layer  
2 includes phosphorescent coatings on a substrate.

1 6. The lighting system of claim 1, wherein reflective layer  
2 includes metallized coatings on a substrate.

1 7. The lighting system of claim 1, wherein the reflective layer  
2 includes fluorescent coatings on a substrate.

1           8.     The lighting system of claim 1, wherein the light source  
2 includes a light emitting diode (LED).

1           9.     The lighting system of claim 1, wherein the light source  
2 provides at least one of ultraviolet (UV) light and infrared (IR) light.

1           10.    A method of producing an image on a display;  
2                   generating a source of invisible light, the light having a  
3 wavelength in a spectrum not visible to the human eye;  
4                   distributing the invisible light over the surface of a reflective  
5 layer, the reflective layer including at least one of a phosphorescent and a  
6 fluorescent surface;  
7                   reflecting the invisible light from the light source by the  
8 reflective layer;  
9                   converting the invisible light into visible light visible to the  
10 human eye; and  
11                  illuminating a display element with the visible light, the  
12 display element including individually selectable pixel elements.

1           11.    The method of claim 10, wherein the source of light includes  
2 a light emitting diode (LED).

1           12.    The method of claim 10, wherein the invisible light includes  
2 light having wavelengths in the ultraviolet (UV) spectrum.

1           13.    The method of claim 10, wherein the invisible light includes  
2 light having wavelengths in the infrared (IR) spectrum.

1           14.    The method of claim 10, wherein the reflective layer includes  
2 a metallized surface.

1           15.    The method of claim 10, wherein the display element is a  
2   liquid crystal display element.

1           16.    The method of claim 10, wherein the display element is an  
2   electronic paper (e-paper) display element.

Sub A2 > 1           17.    A display system, comprising:  
2                   a light source providing invisible light having a wavelength in  
3   a spectrum not visible to the human eye;  
4                   a light guide, dispersing the invisible light over a defined  
5   region;  
6                   a light converter, converting the invisible light to light having  
7   a wavelength visible to the human eye; and  
8                   a liquid crystal display layer receiving and transmitting the  
9   visible light.

1           18.    The display system of claim 17, wherein the light guide  
2   overlays the liquid crystal display.

1           19.    The display system of claim 17, wherein the liquid crystal  
2   display overlays the light guide.

1           20.    The display system of claim 17, wherein the light converter  
2   includes phosphorescent coatings on a substrate.

1           21.    The display system of claim 20, wherein the light converter  
2   includes metallized coatings on the substrate.

1           22.    The display system of claim 17, wherein the light converter  
2   includes fluorescent coatings on a substrate.

1           23.    The display system of claim 23, wherein the light converter  
2   includes metallized coatings on the substrate.

1           24.   The display system of claim 17, wherein the light source and  
2 light guide combine to form a front lighting system.

1           25.   The display system of claim 17, wherein the light source and  
2 light guide combine to form a back lighting system.

1           26.   The display system of claim 17, wherein the light source  
2 includes a light emitting diode (LED).

1           27.   The display system of claim 17, wherein the light source  
2 provides at least one of ultraviolet (UV) light and infrared (IR) light.

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